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ABSTRACT

This pamphlet summarizes the interim report of the Head Start Planned Variation Study although information from other sources is included. During the pilot phase (1969-1970) eight distinct approaches to preschool education were analyzed with regard to the nature and extent of implementation of early education models and program effects. The first group of findings deals with differences in ease of implementation in new locations and with external factors which facilitate implementation. The second group concerns the nature of experiences provided to children by preschools based on different educational philosophies and methods. The third set of findings concerns the effects of preschool programs on children and their families. The preliminary and tentative nature of all of these findings is stressed because they are based on only the first year of a 3-year program of evaluation. The complete interim report is available as PS 004 916. (WY)

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IMPLEMENTATION OF PLANNED VARIATION IN HEAD START

I. Review and Summary of the Stanford Research Institute Interim Report: First Year of Evaluation

Prepared for the

Office of Child Development

U.S. Department of Health, Education, and Welfare

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by

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PROJECT HEAD START was organized in 1965 to increase opportunites for preschool children of the poor by providing an environment in which each child has the opportunity to develop his full potential. As a comprehensive program, it offers such children a variety of services. Each local Head Start program must include the following components: Health, nutrition, education, psychological and social services, parent involvement and volunteer participation. The emphasis Head Start has placed in programming for each of these areas has given substantial impetus to the development and application of innovative approaches to the delivery of early childhood services.

In 1969 a major experimental program called Planned Variation, funded and coordinated by the Office of Child Development, was initiated within the framework of Head Start's education component under the direction of the Senior Education Specialist and her staff. Designed for the first year to provide information about implementation of various pre-school curricula in the Head Start classroom, the evaluation of the program was contracted to Stanford Research Institute under the O.C.D. direction of the Evaluation Branch.

Despite many difficulties, the first year project was successfully completed because of the help and cooperation of many people: Richard E. Orton, Associate Director of the Bureau of Head Start and Child Service Programs, Richard Armstrong, then Deputy Associate Director, Mary McLean of the Education Component, Follow-Through personnel, Office of Child Development Regional Staff, modellers and their staff, Planned Variation consultants, and Head Start Director, teachers, aides, parents and children.

It should be noted that the Office of Child Development and Project Head Start place firm emphasis on good preschool practices. They do not prescribe curricula or suggest that local programs adopt a "model" for their educational component. We expect, however, that Planned Variation will provide important information for child development programs.

Jenny Klein, Senior Educational Specialist
Lois-ellin Datta, Chief, Evaluation Branch

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EXECUTIVE SUMMARY

The Head Start Planned Variation study is a research program in early education. Funded and coordinated by the Office of Child Development it explores the impact of various curricula on young children from poor families. It is conducted in conjunction with Follow-Through, a project directed by the Office of Education which continues comprehensive compensatory education in the elementary grades.

The objectives of Planned Variation are two-fold:

- to compare the short-term and long-term effects of well-defined approaches to early childhood education
- to assess the cumulative impact of a continuous, systematically coherent program from the preschool years through the early elementary school years.

During the pilot phase -- the school year 1969-1970 -- eight distinct approaches to preschool education were included in the Head Start Planned Variation study. During that year, the evaluation dealt with two issues:

- the extent and nature of implementation achieved by the different models
- the effects on children, on their families and on programs of the experiences provided by the different models.

The primary focus was on analyzing the processes by which the models were implemented. In subsequent years, the focus of evaluation will shift to measurement of effects.

This review and summary is based essentially on the interim report prepared by Stanford Research Institute, Implementation of Planned Variation in Head Start: Preliminary Evaluations of Planned Variation in Head Start According to Follow Through Approaches (1969-1970), although information from other sources is also included. A more detailed discussion of Planned Variation is contained in the interim report.

The first year of the Head Start Planned Variation study yielded several important, although preliminary, findings. They concerned the processes involved in establishing early childhood education models in new sites, the nature of experiences provided for children by different educational models, and the range of models' effects on children and their families.

A first group of findings dealt with differences among early education models in their ease of implementation in new locations and with external factors which facilitate implementation. A number of factors influencing success in implementation were documented, and these were things which one might have predicted would be important but which previously had not been studied systematically. Among the factors contributing to successful implementation of early education models were:

- the amount of pre-service and in-service training and program supervision provided by a model
- the adequacy of facilities and materials in a particular Head Start center
- the political stability of a Head Start center within the community.

In addition, models that resembled "packages", having many explicit, teachable components were more easily implemented during this first year than were models in the form of highly flexible advisory and consultant systems. In general, the information about implementation pointed to particular, controllable factors which lead to successful operation. This kind of information should be extremely valuable to states and communities that are attempting to set up early education programs.

A second set of findings concerned the nature of experiences provided to children by preschools based on different educational philosophies and methods. These findings provided the first systematic documentation of the fact that programs spanning the spectrum of current approaches to early childhood education actually do vary not only in terms of their "rhetoric" but also in terms of children's daily activities, the classroom organizations, and the teaching strategies they promote. It was found that:

- in areas of primary importance to preschool models, children's experiences reflected models' stated orientations
- in areas of lesser importance to models, children's experiences were less distinctive.

These findings are important because they demonstrate that the proliferation of early education models which has occurred over the last several years is offering a wide-range of diversity in the kinds of preschool experiences which can be provided for children. They are also important because they are some of the first data which enable us to tell communities and parents of all backgrounds precisely what children's experiences will be like in preschool programs based on different models.

The third set of findings concerned the effects of preschool programs on children and their families. These findings were especially important because they pointed to effects of Head Start in areas previously not reported. In addition, they demonstrated changes in mothers' behaviors which might well influence the kinds of home experiences provided for the siblings of Head Start children, as well as the children themselves. It was found that:

- Head Start children improved in performance on measures of cognitive functioning and academic achievement more than is attributable to maturational patterns in low-income children.

- Head Start children increased in their ability to inhibit motoric and verbal responses in situations where such inhibition is appropriate. They appeared to have learned what a question is and what an appropriate response is and to have learned how to focus on the essential components of school-like tasks (increases were again beyond those due to maturation).

- The mothers of Head Start children increased significantly in their verbal communication with their children and in their praise of them in a learning task -- once more the increases were greater than would be expected from changes accompanying low-income children's usual maturational growth.

- On some of these measures, well-implemented Planned Variation models differing in content and approach appeared to be equally effective. They produced nearly equal gains -- and gains which were slightly larger than those which occurred in "regular" Head Start classes.

- In other areas, including parental attitudes, Planned Variation models differing in orientation demonstrated a specificity of effects such that programs having well-formulated objectives in particular areas produced changes consistent with their objectives. Similarly, the relative emphases given to various areas of children's and parents' development by different Head Start models appeared to have been successfully transmitted to parents and to have influenced their attitudes.

In conclusion, the pilot year findings indicate that Head Start Planned Variation as a study is contributing substantially to our under-

standing of early childhood education programs while the models included in it are contributing to accelerated growth in participating children and their families. Planned Variation is providing necessary information about the nature, the effects, and the dissemination of well-formulated approaches to compensatory education; it is producing evidence of programs' effects in many areas, some of which were previously unexplored; and, as a by-product, it is advancing the development of instruments for measuring and evaluating young children's psychological functioning and experiences.

HISTORY OF HEAD START

During the last decade, an increasing number of psychologists and educators began to study the effects of early experiences on human development. Diverse theories and research findings pointed to the first five years of life as a time when the environment exerts major influences on later functioning (Hunt, 1961; Bloom, 1964). Simultaneously, evidence mounted that children of the poor generally do not have the opportunities that promote optimal growth during this period. Findings from some of this early research are summarized in Deutsch et al., 1967 and in Pavenstedt et al., 1967.

Together, these facts suggested that preschool compensatory education might be an important step for disrupting the cycle of poverty. Combined with powerful social and political factors, this notion led to the authorization of Project Head Start in 1965. Among its comprehensive objectives were the following:

- improving the child's health and physical abilities
- fostering the emotional and social development of the child by encouraging self-confidence, spontaneity, curiosity and self-discipline
- promoting the child's mental processes and skills with particular attention to conceptual and verbal skills
- establishing patterns and expectations of success for the child in order to create a climate of confidence for his future learning efforts
- increasing the child's capacity to relate positively to family members and others while at the same time strengthening the family's ability to relate positively to the child
- developing in the child and his family a responsible attitude toward society and fostering constructive opportunities for society to work together with the poor in solving their problems
- increasing the sense of dignity and self-worth within the child and his family.

Although these objectives have continued to guide Head Start, the program has evolved considerably since its inception. Most early Head Start centers were varied, hastily assembled adaptations of the adjustment-centered nursery schools long attended by middle-class children. Curricula for providing enriched experiences to children of the poor simply were not available in 1965. A few were being developed, but they were in preliminary form. Since that time, there has been a proliferation of preschool models for disadvantaged children based on different educational theories and methods.

IMPACT OF HEAD START

Information about the effects of Head Start has been collected since the program's beginning. A good deal of research has focused on understanding the diversity of "natural variation" in Head Start programs and the relationship between this diversity and the effects of programs. The data from several years of these differentiated evaluations are now being analyzed. They address the question: What elements of the naturally occuring variations in Head Start programs lead to what kinds of changes in which participating children and their families? (Datta, 1969a).

Other evaluations have concentrated on Head Start's average over-all impact on disadvantaged children -- either nationally or in particular centers -- rather than on the program components related to effects. Similar evaluations have been undertaken by experimental laboratory preschools, and the findings from the two groups of studies have been basically alike.

Typically, these evaluations showed increases on general ability and achievement tests immediately after both summer and full-year preschool programs. Participant children performed better than non-participants and the differences were statistically significant. Although most evaluations demonstrated these immediate increases, the magnitude of gains was large in only some cases. The increases were greatest when programs were of longest duration, when program objectives were well-formulated and oriented towards the areas evaluated, and when the participating children's initial level of performance was low. In addition to reporting gains on measures of intellectual functioning, some evaluations also reported immediate positive effects on children's attitudes, motivation and social behavior as rated by teachers (Grotberg, 1969).

Follow-up evaluations, however, have indicated that the immediate advantage to participant children generally diminishes by the end of the first or second year in public school. What seems to happen is that the increases in rate of development promoted during the preschool year on

measures of ability and achievement are not sustained during the early elementary grades. Rather, the rate of growth during these years is somewhat less for participant than for nonparticipant children. The result is that usually by the end of first grade, although in a few cases not until the second or third grade (Beller, 1969; Engelmann, 1970; Weikart, 1970), poor children who have had preschool experiences do not perform better than their peers who did not, and both groups fall behind national norms.

The usual explanation for the "leveling off" in rate of development by participant children is that public schools are unable to support the increment which Head Start and laboratory schools produce. As Datta (1969a) explained:

> It may be naive to expect a child to continue to progress rapidly in a classroom where the teacher may be responsible for 30 or more children, may be primarily concerned with maintaining order and perhaps convinced that most of her students have little potential (p. 14).

If this interpretation is correct, continuation of compensatory education into the primary grades might sustain preschool gains. Findings from a few scattered studies with several dozen children are consistent with this notion (Karnes, 1969; Jack Victor, personal communication about the Institute for Developmental Studies Early Childhood Education program in New York City, 1969).

Basically, the findings after several years of preschool compensatory education are inconclusive. Scientific concepts suggest that preschool programs can provide disadvantaged children with a set of experiences at an important time in their lives that will help diminish the effects of poverty. Supportive evidence has come from a few Head Start programs and laboratory preschools which produced relatively large improvements in learning ability. But the majority of Head Start and other compensatory preschool programs, although producing measurable immediate gains, have not produced lasting increases in children's intellectual development.

The documented range of programs' effects points to the importance of understanding the processes which characterize different approaches to preschool education. Some of the basic questions which are beginning to be clarified through the study of "natural variations" in Head Start, but which need further investigation are: What aspects of successful programs are responsible for their effects -- their content, their methods, their strategies of planning and supervision? To what areas do the

specific effects of programs generalize? Do increases on ability or achievement tests indicate that children have an increased understanding of relationships, of principles, of their environment? What are the unexpected side-effects of various programs? Do positive effects diffuse to the younger brothers and sisters of participant children, promoting their development also?

Our limited understanding of these and other issues places preschool educators in a difficult position. On the one hand, little information exists about the total range of programs' effects or the processes which underlie these effects. On the other, the Federal Government's interest in developmental day care for preschool children is expanding, as is the interest of state and local governments and industries; in addition, a larger proportion of Title I funds are being allocated to preschool programs than heretofore.

PURPOSES OF PLANNED VARIATION

Planned Variation was undertaken in 1969 to provide extensive information about preschool compensatory education by exploring several well-formulated approaches in a variety of settings. In conjunction with Follow-Through it explores such issues as:

- The relative effects of various well-defined compensatory education strategies on Head Start children and their families.
- The lasting effects of continuous intervention following the same educational strategy over severl years.
- The contribution of intervention in preschool in contrast to intervention in the primary grades.
- The nature of experiences provided by different programs
- The processes which account for programs' effects
- The mechanisms of curriculum implementation. What does it take to initiate and carry out different curricula in Head Start?

The importance of these issues becomes clear when the field of early education is viewed from a brief historical perspective. When Head Start began there was no tested and generally accepted curriculum for children of the poor. The few experimental curricula which had been

designed for these children were in preliminary stages of development. Since then, and largely as a result of Head Start, there has been a proliferation of approaches to compensatory early education. Small-scale evaluations (often directed by program developers themselves) have been undertaken to demonstrate the values of particular approaches. Simultaneously, pressures have mounted to select and implement the best of these approaches (which often means those reporting largest increases on standardized tests). Programs which demonstrate "success", even where data are scanty or incomplete, have been given widespread attention as a result of the desire to find something that "really works." These pressures have led the National Head Start Office to the conviction that, in the best interests of the children served by these programs, long-term comparative information like that provided by Planned Variation is necessary before any programs are broadly endorsed.

PLANNED VARIATION MODELS

In order to be included in the Head Start Planned Variation study, an early education model had to meet the following criteria:

- It must have been tested in a laboratory school, representing a well-formulated strategy for preschool education.

- The sponsor of the model must have been implementing a program for elementary school children based on the model's principles as part of the Follow-Through program.

A program sponsor refers to an individual, a group, a university, or a private corporation that is responsible for directing a specific model.

On the basis of these criteria, eight preschool models were selected to participate in the Planned Variation pilot year. Each model was implemented in two communities where the sponsor had already been operating Follow-Through classes. In the two remaining years of Planned Variation, the eight models will be extended into additional communities and four new models will be added. Together, the models selected for Planned Variation are essentially representative of the existing range of well-formulated approaches to early childhood education.[1]

Brief descriptions of the eight first year models are given below.[2] More extensive descriptions can be found in the Appendix to this summary.

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A pragmatic action-oriented model, sponsored by the Education Development Center in Newton, Massachusetts, was inspired by the English Infant Schools. Its objective is to fashion classroom environments responsive to the individual needs and styles of children and teachers.

The academically-oriented preschool model is sponsored by Wesley Becker and Siegfried Engelmann of the University of Oregon. It promotes academic learning in reading, arithmetic and language through structured drills and reinforcement techniques.

The behavior analysis model was developed and is sponsored by Don Bushell of the University of Kansas. The goal of the program is to teach children needed subject matter skills such as reading and arthmetic through systematic reinforcement procedures using a token system and through individualized programmed instruction.

The Bank Street College model, developed and sponsored by the Bank Street College of Education in New York City, represents a "whole-child" approach in which the ultimate objective is to enable each child to become deeply involved and self-directed in his learning.

The Florida parent-educator model, developed and sponsored by Ira Gordon of the University of Florida, uses both classroom and home instruction through parent-educators. A parent educator is a mother from the local community who works both in the classroom as a teacher's aide and with parents in their homes. It is a cognitively-oriented program based on the theories of Piaget and other developmental psychologists.

The Tucson early educational model, originally designed by Marie Hughes, is sponsored by the University of Arizona. It emphasizes the development of language competence, intellectual skills, motivation, and social skills through providing children with freedom to choose activities, through fostering cooperation among children, and through systematic positive reinforcement from teachers.

The responsive model, designed and sponsored by Glen Nimnicht of the Far West Laboratory for Educational Research and Development, is focused on helping children develop both a positive self-image and intellectual ability through use of a responsive environment which consists of self-pacing and self-rewarding materials.

The cognitive model, developed and sponsored by David Weikart of the High Scope Educational Research Foundation, presents a cognitively-oriented preschool program derived from the theories of Piaget; the model emphasizes the importance of home training sessions with mothers and of decision-making roles for teachers.

For the pilot year analyses models were grouped into three categories on the basis of their primary orientation towards children's learning. The three categories are Preacademic, Cognitive Discovery and Discovery approaches.

The Preacademic programs are the Engelmann-Becker academically-oriented and the Bushell behavior analysis models. Both foster development of preacademic skills, such as number and letter recognition, reading, writing, and instructional language; their techniques include use of systematic reinforcement.

The Cognitive Discovery programs are the Florida parent-educator model, the Tucson early education model, the Nimnicht responsive model, and the Weikart cognitive model. Each promotes the growth of basic cognitive processes such as categorizing, differentiating, abstracting, and inferring by providing continuous verbal accompaniment to children's sequenced exploration.

The Discovery programs are the EDC pragmatic action-oriented model and the Bank Street College model. Both foster learning as part of the humanistic growth of the "whole child" by encouraging such experiences as free exploration and self-expression. They place heavy emphasis on the child's sense of self-worth, of trust in adults and the world, and respect for others.

PILOT YEAR STUDY

The objectives of the Head Start Planned Variation pilot year were: 1) to document implementation of the eight different models; 2) to collect baseline data for subsequent longitudinal analyses, and 3) to undertake preliminary analyses of program effects. The primary objective of this initial year was to document implementation. In future years, the focus will shift to measurement of effects, both immediate and sustained -- with assessment of the same children continuing through the end of third grade. The reason for this two-stage approach was to enable models to achieve satisfactory implementation before extensive program comparisons were made.

Measures of Implementation

The process of model implementation was documented in four ways. Each sought to answer the question: To what extent do the classrooms embody the teaching strategies and the approaches to children elaborated in their respective models?

The first way of describing implementation was through reports prepared by Office of Child Development consultants. These consultants were specialists in early childhood education, were generally familiar with a particular model, and observed the model in a community which they visited regularly for one to three days each month. Their reports appraised the success with which various classrooms were implemented and the level of performance of the different teachers, and described the efforts of the sponsor representatives to train, guide and support the teachers. The second method used similar evaluations prepared by sponsors. The third way involved information collected in teacher questionnaires. The teachers were asked to describe the sponsors' training efforts and their own educational objectives for the children.

The fourth method of documenting implementation analyzed the actual experiences provided for children by the different models. This information was derived through systematic observations using the Stanford Research Institute Classroom Observation instrument. The instrument was developed to enable sponsor representatives and trained SRI staff to make classroom observations in the Head Start and Follow-Through Planned Variation models. It addresses such questions as: How is time allocated? What materials are used? What do the adults do? What do the children do? How are the children grouped? What control systems are used? What is the affective environment? (Stanford Research Institute, 1971, p. 114.)

Measures of Effects on Children

In the pilot year, models' effects on children in several important areas were measured with both established and experimental psychological tests. These included measures of cognitive functioning, achievement, response styles in coping with tasks, personal-social development, mother-child interaction, and parental attitudes. The distribution of resources in the measurement battery was as follows: about 34 percent to cognitive development, 4 percent to achievement, 21 percent to response style, 34 percent to mother-child interaction and parental attitudes, and 6 percent to personal-social development (this last area was evaluated through clinical case studies prepared by a team of psychologists from the University of Maryland under the direction of Dr. Laura Dittman; the results of these studies are described in Dittman et al., 1970).

For some models (the Preacademic), the measurement instruments represented a reasonably adequate set of criteria for evaluating their effects, although the full extent and variety of gains in academic skills areas may have been under-estimated. For other models (the Cognitive

Discovery and Discovery), while these measures tapped some of their objectives, goals in other areas (such as the fostering of initiative and curiosity) were not tapped, due to the unavailability of validated, standardized tests in these domains. Thus, due to the state of the art in measurement of young children, it was not possible in the first year of Planned Variation and may not be possible in subsequent years to measure all the significant concerns of all the programs. Still, an effort has been made to develop a battery representing a wide range of areas for the second and third years, and the effort itself appears to be consolidating knowledge in the field of measurement.[3]

The first instrument, a measure of academic achievement, was a combination of six subtests from the "New York University Early Childhood Inventory". It tested knowledge related to specific areas, including science, math, letters, numerals, shapes, and prepositions.

The second and third measures, the Preschool Inventory (Caldwell, 1967) and the Stanford Binet, were included as two of the best available measures of general cognitive development. Both are complex measures, however, and scores on them reflect numerous motivational factors as well as cultural experience and general learning ability (Zigler and Butterfield, 1968). The Preschool Inventory as well as the NYU Early Childhood Inventory were also included in the Follow-Through Evaluation in order to achieve continuity of measures.

The fourth measure was the Hertzig-Birch scoring of the Stanford Binet. It analyzes the way a child responds to the Binet. A child may pass or fail an item in several ways. He may give a correct answer, for example, either by doing what is specifically required by the task (a delimited response), or by doing things which extend beyond the limits of the task (an extended response). In either case, his response may be verbal or nonverbal. A child also may not give a correct answer in any of several ways: he might provide an irrelevant verbalization instead of engaging in task-directed activity (substitution) or might not respond at all (passivity).[4] The Hertzig-Birch scoring provides a description of his style of responding to cognitive demands.

The fifth instrument, a measure of another component of response style, was the Maccoby Motor Inhibition Test. It requires a child to perform several tasks twice, once at his natural speed and once as slowly as he can. The difference between the two scores is considered a measure of his capacity to inhibit movement.[5]

Measures of Effects on Parents

The analysis of programs' effects on parents included an assessment of mother-child interaction styles. This domain was included because: 1) previous research showed a strong relationship between the nature of mother-child interactions in a structured situation and children's success in both laboratory problem-solving tasks and in school (Hess et al., 1968; Bee et al., 1969; Hess et al., 1969) and 2) an objective of several Planned Variation models was to involve the parents in the program, particularly the mother, teaching her new techniques for interacting with her child in learning situations.

The Eight-Block Sort Task developed by Hess and Shipman (1965) was administered to study mother-child interaction. The task involves sorting eight blocks into four groups defined by two criteria. The blocks differ according to four attributes -- height, mark, color, and shape. Only two of these attributes are relevant to the sorting task: height (tall or short) and mark (X or O painted on the top).

The mother teaches the child to sort the blocks on the basis of height and mark. The child has to sort them this way and explain the reasons for the groupings. The usefulness of the task has been explained as follows:

> • The opportunity for each mother to interact freely with her child in a standardized situation allows a comparison of mothers' styles of interaction: How does the mother communicate information to her child? . . . How does she structure the learning situation? In particular, does she provide her child with task-relevant information? . . . How does she monitor and regulate the child's behavior? . . . How do the child's behavior and performance relate to maternal behavior?

Another parent measure was a questionnaire developed by Stanford Research Institute. The items contained in the questionnaire tapped several areas, among them the following:

- The extent of parental involvement in the Head Start program
- Parent attitudes toward schools and toward other institutions influencing their lives

- The things the parents liked best about the Head Start program
- The differences parents thought Head Start made in their lives.

THE SAMPLE

The pilot year sample included: 1) children in the eight Planned Variation programs, implemented in several classes in two communities each and 2) children in "regular" Head Start comparison classes, generally in the same communities.[6]

The total number of children in the sample was 2,647. Of these 1,569 were in Planned Variation classes and 1,078 were in "regular" Head Start comparison classes. The children came from northern (5.3 percent), eastern (23.4 percent), southern (42.7 percent), central (21.2 percent), and western (7.4 percent) states. Most (72 percent) were between 4½ and 5½ years old at the beginning of the Head Start program in the fall, although they ranged in age from 3 to 6½ years. The sample included approximately half girls and half boys.

The ethnic composition of the sample was approximately 55 percent Black, 25 percent White, 7 percent American Indian, 2 percent Puerto Rican, and 1 percent Mexican American (no information was available on the remainder of the sample). This represents a composition fairly similar to that of the national Head Start program.[7]

The majority of parents in the sample had attended high school only (49.5 percent) or grade school only (43.1 percent). The most frequently reported employment of the heads of households was as an unskilled laborer (43.8 percent).

With respect to age, sex, and ethnicity, children in the Planned Variation classes and children in the "regular" Head Start classes were alike for the group as a whole, although within given sites there were marked variations in these characteristics. The data analysis procedures took these variations into account. The educational levels and occupations of parents were also similar across the Head Start and "regular" classes, although again there was considerable variation within sites. These variations also were dealt with in the data analysis.

Many children (approximately 27.8 percent) had prior Head Start experience. In addition, 74.1 percent were from families in which one or more siblings had previously attended Head Start. Thirty-two percent

of all parents were described as active in the program. These data are consistent with national reports that indicate Head Start is an ongoing experience for children and their families in many communities (Bates, 1970).

IMPLEMENTATION FINDINGS

The pilot year data on implementation, like the other findings, are tentative. Implementation will be studied further in the second and third years of Planned Variation, after sponsors have had more time to develop training procedures. Still, some preliminary patterns are noteworthy.

One measure of implementation was derived from reports by program sponsors and Office of Child Development consultants. Table 1 presents the ratings of teacher implementation given by sponsors in the fall and the spring. These ratings indicated that:

- Most teachers (67 percent of 68) began the year in October low in implementation, although the majority had been given two weeks or more of preservice training.

- By the end of the year, a large number (75 percent) of teachers had achieved high or medium implementation. Thus, many of them made substantial progress during the year.

- There was a relationship between curriculum approach and success of implementation, such that:

  1) In both the fall and spring, the largest proportion of teachers rated high or medium in implementation was in the Preacademic models.

  2) The proportions of teachers rated high in the Cognitive Discovery and Discovery programs were about equal, but more teachers were rated low in Discovery programs.

Table 1

RATINGS OF TEACHER IMPLEMENTATION BY SPONSORS

Period	Teachers Ratings	Preacademic Models	Cognitive Discovery Models	Discovery Models	Total
Fall 1969	High	10%	3%	0%	5%
	Medium	42%	21%	21%	28%
	Low	48%	76%	79%	67%
	N	19	28	14*	61
Spring 1970	High	55%	31%	44%	41%
	Medium	45%	38%	13%	34%
	Low	0%	31%	44%	25%
	N	19	33	16*	68

* Reflects only the Bank Street model.

At the end of the year, sponsors were asked to predict the performance of teachers during the second year of Planned Variation. Preacademic sponsors predicted that virtually all their first year teachers would perform as program exemplars by the next year. Cognitive Discovery and Discovery sponsors predicted slower rates of improvement, with little or no change for some teachers.

These data suggest that the changes in teacher behavior required by Cognitive Discovery and Discovery models may take a good deal of time to occur and may not realistically occur in all Head Start teachers. Some intrinsic characteristics of these models might explain this phenomenon. Most of them require the internalization of a broad theory of child development. They require a teacher to initiate and respond to a large array of naturally occurring events in insightful, supportive ways which foster children's growth in numerious dimensions. The Preacademic models, in contrast, provide discrete and highly specific pre-planned components in their daily operation. It appears that these kinds of differences influence the relative ease with which Head Start centers can implement a new model in a short time.

In addition to these intrinsic attributes of models, the study pointed to external factors which affect the process of implementation:

- There was a relationship between the amount of teacher training provided by sponsors and success in implementation. The models with the most teacher training and support -- the Preacademic models -- ranked highest in implementation.[8]

- There was essentially no relationship between years of education and success in implementation for Planned Variation teachers. There was, however, a relationship between teacher's background and rating of performance in the "regular" Head Start comparison classes.

The second finding is especially noteworthy since the teachers in Planned Variation classes had, on the average, less previous academic training than teachers in the "regular" classes. Planned Variation classes had fewer teachers with bachelor degrees or further training (33 percent) than did "regular" classes (45 percent) and more teachers who had attended only high school or junior college (67 percent in Planned Variation and 54 percent in "regular" classes). The relationships between background and success in implementation suggest that sponsors' technical assistance may have provided the "know-how" teachers ordinarily gain through academic training and experience. It must be kept in mind that these analyses refer to amount (years) of training only, not to professional specialization (e.g., "degree in early education").

The first finding -- more training and support in the Preacademic than in other models accompanied by greater success in implementation for these models -- raises the question of whether model content and training strategies are intrinsically related to one another. Implicit in the Discovery models -- especially in the EDC pragmatic, action-oriented model -- is the notion of few precise specifications for teacher behavior or curriculum content. The EDC (and to a lesser degree the Bank Street) model is an advisory and consultant system which enables schools to move toward goals that are determined to a large degree by the particular community. In contrast, the Preacademic models (and to some extent the Cognitive Discovery models) are closer to "packages" having explicit, teachable components.[9] The Planned Variation findings suggest that these different orientations influence both program content and the modeller's strategy and success in fostering satisfactory operation.

The sponsors' and consultants' reports also indicated specific issues involved in implementing new early education models, and quotations illustrate some of these issues. For example, the models required complex changes in teacher behavior. In the fall, one consultant reported:

> "The teacher is telling, rather than helping, the child discover (a difficult task for many teachers, yet a major component of this model). I'm not sure the teachers know what 'exploration and discovery' means. I think they think they discover for the child."

Similarly, new teacher-aide relationships had to be worked out:

> "The relationship between the teacher and assistant teacher is not implemented. The assistant teacher is used more for clean-up chores than as an assistant teacher. According to the model, the assistant teacher is supposed to plan with the teacher and work out different responsibilities in terms of the program."

In the spring, consultants reported important changes in many program components. A typical description of teacher growth said:

> "Much improvement has been made since the beginning of the program. The teachers have a better understanding and a more positive application of this model's approach. In these classrooms, there is better utilization of space as well as material . . ."

Another spring report stated:

> "Most teachers, including aides, seem to reflect feelings of real accomplishment in making the model work; their success is visible and they feel good about it; it has sharpened specific teaching skills and increased their understanding of the reinforcement principle" (Stanford Research Institute, 1971, pp. 95-100.)

The reports also pointed to some additional external factors which facilitated ease of implementation. Successful operation was more likely to be reported in sites where:

- Head Start facilities and materials were at least adequate. Some sites were subject to disruption due to heating, plumbing and lighting breakdowns and slow procurement of necessary equipment, while others enjoyed well-arranged, well-lighted, well-maintained and well-equipped quarters.

- The Head Start program itself was stable. Some sites were disrupted by internal dissension, racial tensions, conflicts between the operating agency and other groups, and delays in funding, while other sites had stable, well-organized staff who worked together as a team and related well to other agencies.

- Teachers felt that the sponsor had something to offer, either because the sponsor's field staff functioned as helpful educational consultants (almost independent of model content) or because the model content was something they really could use.

These and other lessons from the first year findings have been used to modify (and hopefully improve) operations during the second year of Planned Variation.

Observations in select classes provided additional, especially interesting information about implementation. These are among the first data describing the actual experiences that children have in educational programs based on different models. They indicate a wide range of diversity in the kinds of preschool experiences which can be provided for children.

In areas of primary importance to models, children's experiences reflected models' stated orientations. In these areas, models generally

could be distinguished from one another and from "regular" Head Start classes. In areas of lesser importance to the models, there was considerable overlap in the nature of children's experiences in the various programs.

For example, the observations showed the following about program content:

- Academic activities involving numbers and language occurred most frequently in Preacademic models.
- Puzzles and games teaching colors, sizes, shapes, and the like and social studies activities occurred most frequently in Cognitive Discovery models.
- "Regular" Head Start classes included a relatively large component of academic and cognitive training -- as much as model programs except in their areas of major emphasis.
- Expressive, role-playing activities such as doll play occurred most requently in Discovery programs and "regular" classes.

In addition to demonstrating a considerable correspondence between models' stated orientations and their actual content, the classroom observations added to the evolving picture of natural variations in "regular" Head Start classes. They demonstrated diversity, for example, in the frequency of academic language experiences provided to children (ranging from occurrence in 3 percent to 27 percent of the observation periods), in puzzle and game experiences (ranging from occurrence in 4 percent to 23 percent of the periods observed), in the frequency of active indoor games (ranging from occurrence in 0 percent to 11 percent of the periods) and in the frequency of individualized instruction (ranging from occurrence in .2 percent to 6.7 percent of the observation periods).

In summary, outcomes of the implementation study included: 1) preliminary data about the complex process of establishing preschool models in new locations and 2) information about children's experiences in different models. When supplemented with findings from the second and third years of Planned Variation, these should be valuable aids to communities that are attempting to establish early education programs which fit their needs.

EFFECTS ON CHILDREN AND PARENTS

Measures of effects, even more than those on implementation, must be viewed as tentative and interpreted with caution. The implementation study demonstrated that successfully establishing models in new sites involves an extensive training effort for sponsor field representatives ("staffing up" time), for teachers and for communities. This suggests that program effects measured in early stages of implementation may not describe levels or patterns of achievement both within and between models or over-all effects as they may appear after two or three years of Planned Variation.

Cognitive Measures

Keeping in mind that the picture represents the first year of implementation, let us examine the data on children's performance. The data showed that on the measures of academic achievement and general cognitive development the mean gains of all the Head Start children -- in both model and "regular" classes -- were considerably larger than those attributable to usual maturational development in these children.[10] These gains, presented in Figure 1, were distributed across all classes and were statistically significant. One half of a standard deviation is often considered a "bench-mark" for judging the educational significance of a change. In this pilot year, over 75 percent of the children across all classes had gains as large as or larger than one half of a standard deviation, gains in representing more than half of a standard deviation change for over half of the children. In the same vein, a strong relationship between previous Head Start experience and children's initial scores was found: the more prior Head Start, the better a child's initial test performance. Both these findings suggest a measurable effect of Head Start on children's cognitive development.

Another preliminary finding was that children in Planned Variation classes made larger gains than children in "regular" Head Start classes on both cognitive measures. (See figure 2.) The differences were quite small, but were statistically significant. Of course, the magnitude of these differences during the "start-up" year in which sponsors had to recruit and train their field staffs and tackle other problems in establishing programs cannot be considered representative. The benefits of participating in model classes (which cost an additional $291 per child on the average over the average cost of $1200 for the comprehensive full year program) versus "regular" classes will be more accurately assessed during the two remaining years of the study.

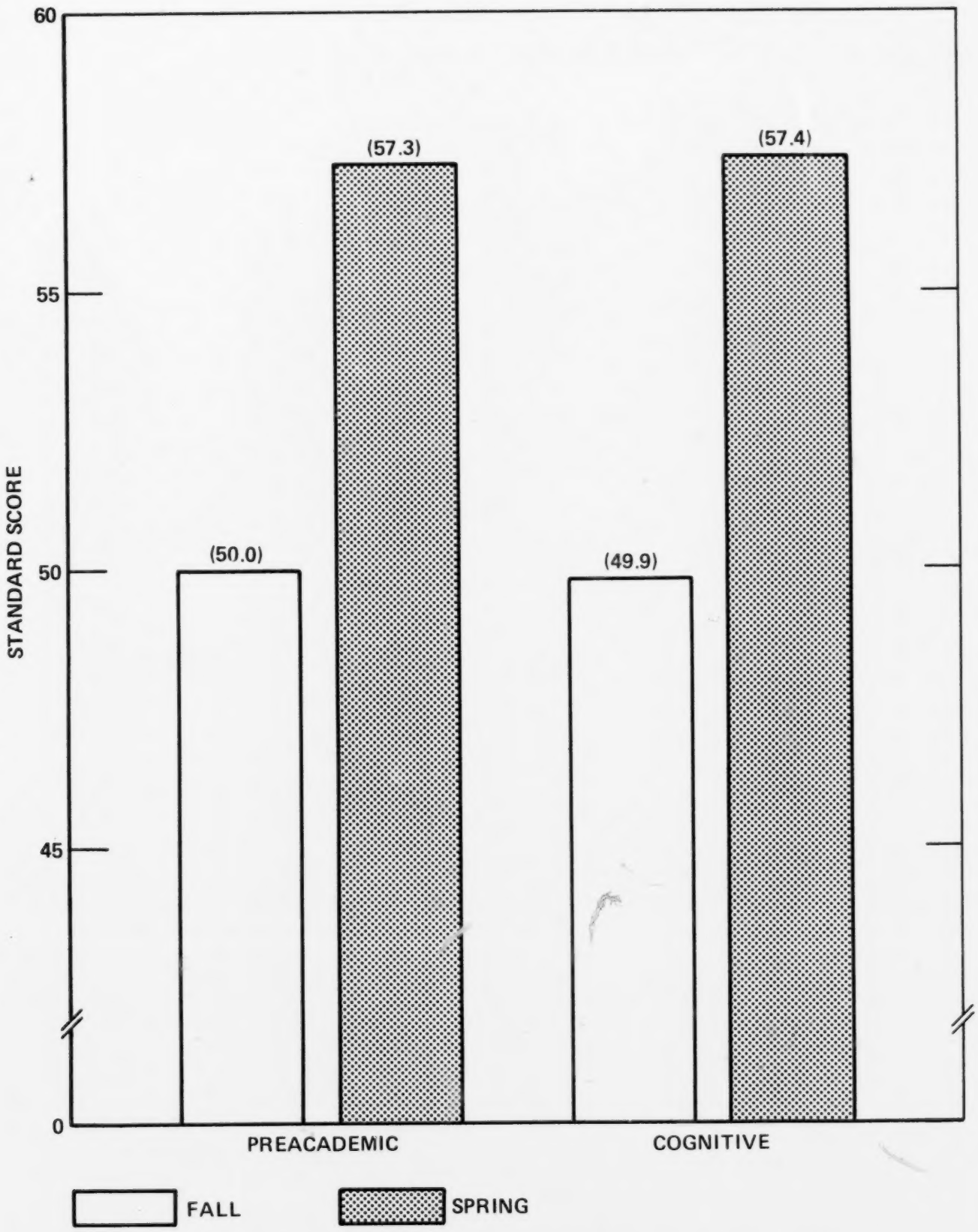

Figure 1. Average Fall and Spring Standard Scores on Preacademic and Cognitive Measures for all Children. The Scores Are Standardized to a Mean of 50 and a Standard Deviation of 10.

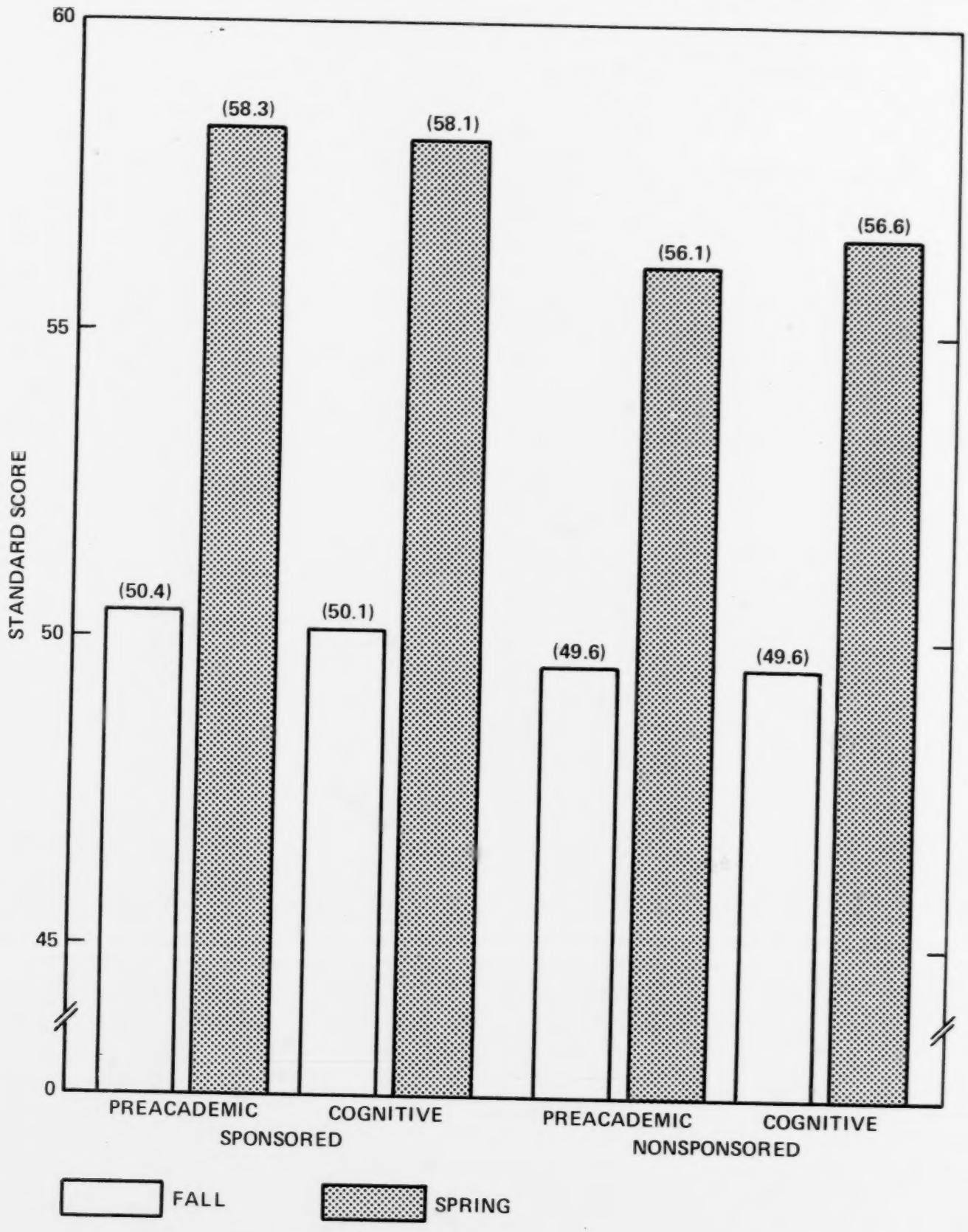

Figure 2. Average Fall and Spring Standard Scores on Preacademic and Cognitive Measures for Children in Model and "Regular" Classes.

In order to compare the effects of different models, classrooms identified as high in implementation were studied. There were no statistically significant differences in children's gains among the three types of programs on either the measure of academic achievement or general cognitive development.[11] There were, however, trends on both measures suggesting largest gains in the Preacademic and Cognitive Discovery models.

Important suggestive patterns also emerge concerning the education and experience of teachers. In "regular" Head Start classes, children's gains on the two cognitive measures were related to teachers' professional background: children whose teachers had the most academic and practical experience made the largest gains. This relationship did not exist for children in model programs. The pattern supports the notion derived from the implementation study that sponsors' technical assistance may provide the "know-how" teachers ordinarily gain through academic training and experience, defined as amount (years) of education or paid teaching experience.

Response Style Measures

The response style measures of motor inhibition and styles of coping with cognitive demands showed consistent and important effects of Head Start programs in areas previously little studied. Each of the measures showed changes manifesting increases in "appropriate response inhibition" in task situations. The increases were greater than those attibutable to maturation alone and showed differences among programs consistent with their orientations.

On the Maccoby motor inhibition measure, children gained significantly. They were better able to inhibit motor responses in the spring than in the fall and the increases were larger than maturational effects. The increases were approximately equal in model and "regular" Head Start classes, but the largest gains within model programs were in Discovery classes.

The Hertzig-Birch measure of styles of coping with cognitive demands included two parts. One was an assessment of the nature of a child's nonwork responses to the Stanford-Binet -- what he did when he failed to work at the Binet task. This measure itself included a ratio of two components -- substitutions and passive behaviors. Substitutions occur when the child offers an unnecessary verbal or nonverbal response instead of engaging in task-directed activity. Passive responses are those in which a child simply does not respond ("When the sticks were presented, he sat still" -- Hertzig et al., 1968, p. 15). There was a significant mean decrease for the children on this measure (illustrated in Table 2), attributable to large decreases in substitutions and small

Table 2

MEASURES OF CHILDREN'S NONWORK RESPONSES
TO THE STANFORD-BINET

Period	Component	Preacademic Models	Cognitive Discovery Models	Discovery Models	All Model Classes	All "Regular" Classes	Total
Fall 1969 Mean Score	Substitutions 1. Verbal	.93	1.18	1.03	1.06	1.35	1.20
	2. Nonverbal	2.27	2.66	1.71	2.24	3.18	2.67
	Passivity	6.56	2.57	2.85	3.70	3.04	3.40
Spring 1969 Mean Score	Substitutions 1. Verbal	.72	.26	.47	.45	.40	.43
	2. Nonverbal	1.70	.59	1.12	1.06	1.00	1.03
	Passivity	9.32	2.96	2.75	4.54	3.21	3.93

increases in passive responses. [12] The magnitude of changes were again approximately equal for model and "regular" classes and were larger than could be accounted for by maturation alone. Within model programs, Preacademic programs had the largest increases in passive responses.

The second part of the Hertzig-Birch described components of a child's approach when he worked at Stanford-Binet tasks. This measure again included two aspects -- delimited and extended responses. Delimited responses are those which are restricted to the defined requirements of the task. Extended responses are those which go beyond the limits of the task; they are spontaneous, unsolicited elaborations in action or speech. A score combining these two work responses decreased during the year, with the decrease attributable essentially to a relatively large decrease in extended responses (the data are presented in Table 3). This means that children were less likely to elaborate on Binet responses in unnecessary ways in the spring than in the fall.[13] Again, the decreases in the model and regular classes were nearly equal and were not attributable to maturation alone. Within the model programs the largest proportional decreases were in nonverbal extensions among children in Preacademic programs.

These findings are extremely important because they demonstrate both a generalized effect of Head Start and a specificity of effects in an area not examined heretofore. The common factor underlying the changes on the three measures was increased "appropriate response inhibition" during task situations much like those children will encounter in elementary schools. The changes in unnecessary responses suggest that the children have learned what a question is and what an appropriate answer is. They also suggest that the children have learned to focus on the essential components of school-like tasks and to cope efficiently with these components.

Within the model programs, a striking specificity of effects was manifested. The Preacademic programs produced the largest decreases in unnecessary non-verbal elaborations during Binet tasks and also produced the largest increases in passivity -- the situation where a child simply provided no response to an item whatsoever. These findings are congruent with the orientation of these programs which emphasizes the child's production of correct verbal responses in the classroom situation. Similarly, the largest increase in motor inhibition was the Discovery programs -- models which focus on the child's exploring a classroom rich in responsive materials and respecting other children's rights and desires -- approaches which should foster control over motor impulses.

Table 3

MEASURES OF CHILDREN'S WORK RESPONSES
TO THE STANFORD-BINET

Period	Component	Preacademic Models	Cognitive Discovery Models	Discovery Models	All Model Classes	All "Regular" Classes	Total
Fall 1969 Mean Score	Delimited Responses						
	1. Verbal	29.62	27.73	30.21	29.06	28.41	28.76
	2. Nonverbal	25.17	34.16	39.46	36.22	37.47	36.79
	Extended Responses						
	1. Verbal	.58	.49	.56	.54	1.15	.81
	2. Nonverbal	2.75	2.56	1.83	2.36	2.96	2.64
Spring 1969 Mean Score	Delimited Responses						
	1. Verbal	28.35	24.27	27.54	26.44	26.24	26.35
	2. Nonverbal	38.89	40.02	41.10	40.09	39.46	39.81
	Extended Responses						
	1. Verbal	.15	.10	.11	.12	.16	.14
	2. Nonverbal	.52	1.11	.89	.88	1.23	1.04

Mother-Child Measures

The measures of mother-child interaction styles showed changes generally consistent with the cognitive measures. These changes, like others reported in this summary, were important because they demonstrated effects in areas not previously reported for Head Start. Several mother-child interaction dimensions were examined using the Hess and Shipman Eight-Block Sort Task. This task requires: (1) a mother to teach her child a particular method of sorting eight blocks and 2) the child to sort the blocks in this manner and explain the basis for the sorting. The following components of mothers' and children's behavior were studied:

- Verbal communication -- the total amount of task-related communication from mother to child
- Task description -- the specific information about performing the task given by the mother to the child
- Regulation -- amount of verbal praise (high score) and blame (low score) provided a child by the mother
- Child verbal responsiveness -- the extent to which the child discussed the task with his mother
- Child success -- the child's success in grouping the eight blocks correctly and in explaining the grouping.

The mother-child interaction data for all the Head Start children are presented in Figure 3. As illustrated there, maternal verbal communication, maternal regulation, child verbal responsiveness, and child success all increased from fall to spring. In the spring, mothers talked more to their children and children talked more to their mothers. Mothers' use of praise rather than blame showed an even greater increase. The largest change from fall to spring, however, was in children's success scores. These scores may reflect both the effects of Head Start on learning skills and the consequence of changes in mother-child relationships. The increases in all the areas were considerably larger than would be expected from typical maturational changes for low-income children.

Mothers of children in model and "regular" Head Start classes changed about equally in their styles of verbal interaction. Children in model programs, however, had significantly greater increases in success on the sort task than children in "regular" classes. This parallels the finding of greater gains for these children on other measures of cognitive functioning.

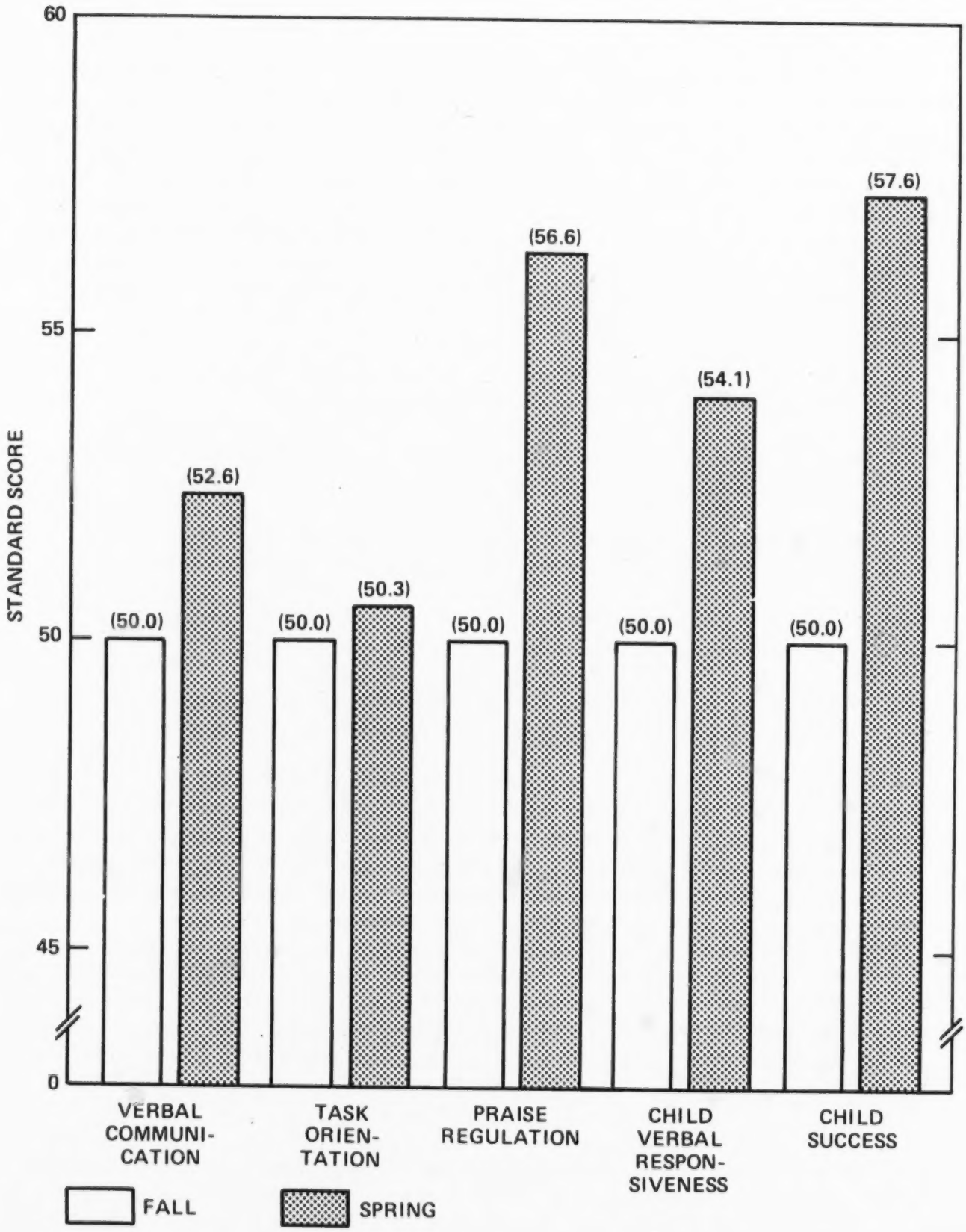

Figure 3. Average Fall and Spring Standard Scores on the Mother-Child Interaction Task for all Children

Within model classes, the largest gains on maternal dimensions were made by parents of children in Cognitive Discovery and Preacademic classes. Gains in maternal use of praise were particularly high in the latter. In addition, children in Preacademic classes made the largest increases on the child success measure. Like the earlier reported findings on cognitive functioning, these trends indicate generally positive effects of particular models in areas congruent with their orientations. All the findings of maternal changes are particularly important, of course, because changes in mothers' behavior may be transmitted to other children in the family, promoting their growth as well as the growth of the Head Start children.

Parental Questionnaire

The final parent measure, the questionnaire, showed interesting variations among Head Start classes. In response to the question, "What difference has Head Start made in your own life this year?", a large number of parents in "regular" programs answered in terms of baby-sitting and day care facilities. In model classes, parents were more likely to emphasize changes in the parent-child relationship and in the child's and the parents' self development. The answers to this question are given in Table 4. They reflect a correspondence between models' orientations and parents' responses.

Parents were also asked, "What are the things you like most about Head Start?" Again, a clear match between models' orientations and parents answers emerged. Figure 4 gives the responses to these questions. In general, the parents of children in Preacademic programs stressed academic performance and learning improvements. In other models, parents placed relatively more emphasis on the relationships among children and between teachers and children. These findings are important because they suggest that parents understand and internalize the orientations of different Head Start models. They suggest that the developmental goals held for children and their families by Head Start programs can be successfully transmitted to parents.

An additional set of questions tapped parental contact and involvement with Head Start. Responses suggested more participation on the part of parents in "regular" than in model programs. In view of the importance of this dimension, the finding suggests the importance of sponsors' seeking ways in which parents can be more involved participants within the framework of the model.

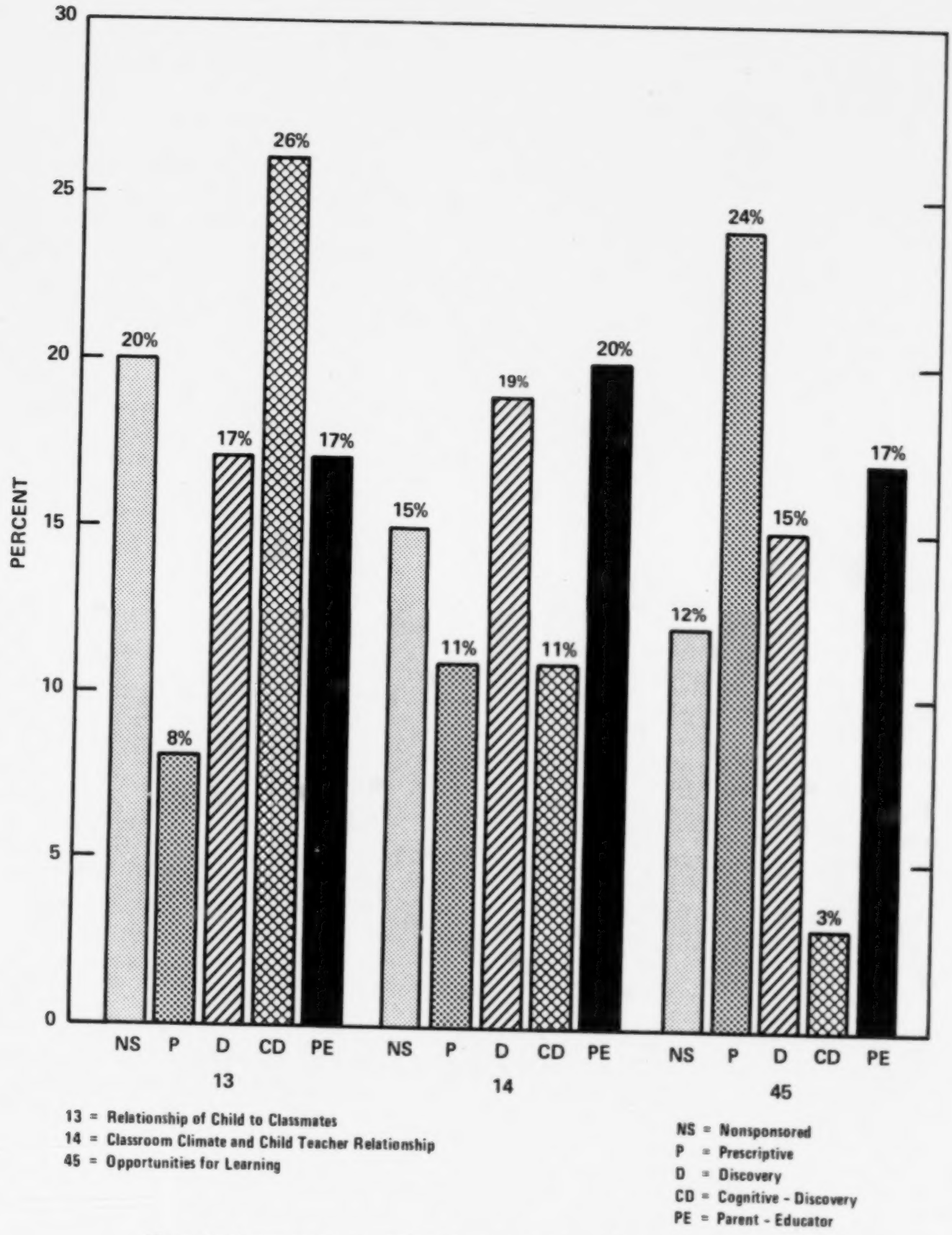

Figure 4. Program Type and What Parents Liked Best About Head Start

Table 4

RESPONSE TO PARENT QUESTIONNAIRE ITEM:
"What difference has Head Start made in your own life this year?"

Response Category	"Regular" Classes	Preacademic Models	Discovery Models	Cognitive Discovery Models	Parent Educator Model
91	15.7%	14.6%	16.8%	12.6%	
16	11.3	16.9	15.2	14.8	13.9
21		14.6		12.6	
45		12.4	11.2		11.1
22			11.2		13.9
13			10.4		
93				12.6	
14					13.9

% - percentage of responses; percentages not listed are below 10%.

Legend:
- 91 Head Start acts as baby-sitting or day care service.
- 16 Relationship to my own child.
- 21 Relationship with teachers, school, or other adults.
- 45 Opportunity for learning.
- 22 Parent self-development learning.
- 13 Child's self-development and self-concept.
- 93 No change.
- 14 Relationship between teacher and child.

SOME INTERPRETATIONS OF THE FINDINGS

In summarizing the tentative findings of effects on parents and children, it is important to view them in the perspective of previous comparative evaluations of preschool intervention programs. When Planned Variation was undertaken in 1969, two patterns of programs' effects had been documented in research projects involving a small number of models and children in particular locations. One comparative evaluation (Weikart, 1969) had demonstrated an equality of effects of well-implemented programs: three different preschool curricula, all with highly trained teachers and careful program supervision, had produced approximately equal gains in children's cognitive performance and academic achievement.

Several other comparative evaluations (Di Lorenzo et al., 1969; Karnes et al., 1969; Miller and Dyer, 1970) had yielded findings consistent with the notion of a specificity of effects. In each of these comparisons, programs with particular emphases and well-formulated objectives in specific areas did indeed have larger effects in these areas than did other programs.

The pilot year Planned Variation findings suggest that a global appraisal supports the equality of effects pattern, but more differentiated analyses point to a pattern of specific effects. Equal effects of well-implemented curricula were reflected in the fact that although there were some significant differences among models, the more striking findings concerned the large effects of all well-implemented classes and the frequent (although small) favoring of model over "regular" classes. At the same time, a specificity of effects was manifested such that programs with well-formulated objectives in particular areas did produce effects consistent with their orientations. This specificity was reflected, for example, by all models on the parental questionnaire, by Preacademic and Cognitive Discovery models on measures of achievement and cognitive functioning, and by the Preacademic and Discovery programs on measures of response style.

It is possible that a third pattern pointing to one best approach might emerge from evaluations of compensatory preschool programs. Such a pattern would be established if one particular model ultimately proves to be most successful in fostering development in all of the domains which are important to Head Start.

It is hoped that the measures of programs' effects in the second and third years of Planned Variation will help to further increase our understanding of these patterns. Measures of such additional domains as motivation, persistence, curiosity and initiative and more differentiated

information in the areas of cognitive development and achievement as well as data on language development should all contribute to the emerging picture of the effects of preschool compensatory education. Thus, the results from small-scale comparative evaluations as well as the preliminary patterns seen in these pilot year findings should be further tested, clarified and extended in subsequent reports.

Footnotes

1. Montessori programs were not included in Planned Variation because of problems in accommodating Montessori training requirements to the existing staffing patterns in Head Start and Follow-Through. They have, however, been included in other federally funded comparative evaluations of preschool models (Di Lorenzo et al., 1969; Karnes et al., 1969; Miller and Dyer, 1970).

2. The descriptions are taken from Klein (1970), Gordon (in press), and the author's own observations.

3. An effort is underway at the Office of Child Development to synthesize the available measures in numerous domains and to "push" the development of promising techniques through validation and collection of standardization data.

4. Hertzig et al. (1968, pp. 13-15).

5. In Maccoby's original use of the test, the slow score alone was considered an index of the child's ability to inhibit movement.

6. In five cases comparison classes were in other communities since samples of non-Head Start children were not available in the same communities.

7. In the 1969 national Head Start program, 51 percent of the children were Black, 23.4 percent White, 2.3 percent American Indian, 6.6 percent Puerto Rican, 8.8 percent Mexican-American, .5 percent Eskimo, .2 percent Oriental, 1.0 percent of other ethnic groups, and no information was available on 6.2 percent.

8. There is some question as to whether the measures of amount of teacher training are adequate indices of the quality of over-all teacher support --personal communication, Dr. Ronald Henderson.

9. The distinction between "package" programs and consultant systems is taken from Gordon (in press).

10. Changes greater than those attributable to usual maturational development in these children were derived by comparing the gains children made during the year with expected gains based on the fall scores of same-ethnicity cohorts who were the same age in the fall as were the Planned Variation children in the spring. This provides an estimate of the childrens' rate of growth in Head Start.

11. The sample size in this comparison (children in well-implemented classes of the different models) was small, including only 20 classes--10 Preacademic, 8 Cognitive Discovery, and 2 Discovery.

12. We can evaluate the meaning of decreases in substitutions by looking at data on other children's styles of response to Binet tasks. Hertzig et al. (1969) found that a low number of substitutions was made by middle-class children; and this suggests that decreases in the Head Start sample are in the direction characteristic of successful performance in school situations.

13. Hertzig et al. (1969) found that middle-class children were likely to make at least one verbal spontaneous extension during administration of the Stanford-Binet. It is difficult to interpret the decrease in extended responses in the Head Start sample, however, since the measure used in Planned Variation was the total number of extended responses given by a child (not whether he made at least one extension).

14. "Professional background" referred to years of academic training and years of teaching experience. Analyses by kind of professional training (e.g., "early education") or kind of teaching experience (e.g., "preschool") will be undertaken in later years.

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PLANNED VARIATION MODELS

The eight models included in Head Start Planned Variation during 1969-1970 are described below. The descriptions were taken from Experiments in Primary Education: Aspects of Project Follow-Through, by Eleanor E. Maccoby and Miriam Zellner; New York: Harcourt Brace, 1970, pp. 6-21.

The EDC Approach
David Armington, Sponsor
Education Development Center
Newton, Massachusetts

Perhaps the essential feature of Armington's EDC approach is an emphasis on self-development, and this holds for teachers and schools as well as for children. Much of the program's inspiration is drawn from the revolution in British Infant Schools. Each class is encouraged to develop its own personality by being responsive to the needs and interests of children and the talents and style of the teacher.

A fundamental aim is for children to assume responsibility for their own learning. There is a rich environment of materials for children to explore. They are encouraged to initiate activities, be self-directing, and become intensely involved in their interests....

The teacher is seen as a responsive, insightful human being who likes children and enters into their growth ... as a guide who is constantly involved. Her objective is to get the children involved in things that are relevant to them ....

The content of what is taught is strongly influenced by local conditions and objectives. It is believed that skills like reading and writing develop more surely if they are not treated as academic exercises but are taught in rich environments that stimulate the children's imagination and thought ....

An important component of the EDC approach is an advisory team, whose task is to help school systems put this philosophy of education into practice and to help teachers learn to regard themselves as researchers and experimenters in the classroom ....

The E-B or Engelmann-Becker Program
Wesley Becker and Siegfried Engelmann, Sponsors
College of Education, Department of Special Education
University of Oregon
Eugene, Oregon

The E-B program starts with the premise that disadvantaged children are academically behind middle-class children; in order to catch up, they must learn at a faster rate than middle-class children are learning. This reasoning leads ... to the position that the primary concern of a compensatory program is to teach academic skills, and teach them rapidly.

At least one hour a day is spent on academic skills--twenty to thirty minutes each on reading, arithmetic, and language. Many procedures are used to train and ensure the attention of the children. The use of reinforcement is a key element of the program. Children are smiled at or praised for correct performance, and there is a conscious effort to make these 'social reinforcers' contingent on the child's accomplishing the academic tasks set out for him. The teacher sits with four to six children and leads them in a quickly paced lesson of questions and responses. The materials are programmed so that the children will not encounter tasks that are too difficult ....

The E-B curriculum is carefully planned to facilitate the acquisition of generalized response systems that will apply to a whole set of problems ....

The E-B program places particular emphasis on remedying language deficiencies. The children in the program have difficulty, for instance, in using articles, conjunctions, prepositions, and ... verbs; they do not seem to know the meaning of 'not' or of relational terms such as 'between' and 'under.' The language-training program, rather than concentrating on the social and expressive uses of language, teaches the concepts used in logical thinking, reading, and arithmetic ....

The Behavior Analysis Program
Donald Bushell, Jr., Sponsor
Department of Human Development
University of Kansas
Lawrence, Kansas

Bushell's Behavior Analysis Program uses systematic reinforcement procedures to teach children the skills they need to compete effectively in school. These include skill in taking the social role of the student (knowing when to talk and when to be silent, staying with assigned tasks, and responding appropriately to praise), as well as the academic skills of language, reading, writing, and mathematics.

... Typical rewards in his program include recess, snacks, art ... stories ... /and/ tokens (along with praise) ... /which/ can ... be exchanged for preferred activities.

Bushell does not see the token system as precluding the possibility that learning in itself can be rewarding for a child. The tokens are only used to support the child's early efforts until he reaches a level of mastery that will allow him to enjoy, and be reinforced by, his new skill.

The teacher's role is that of a behavior modifier. If a child has earned too few tokens, the teacher knows something is wrong ... Thus, the token system checks the teacher's behavior as well as motivates the child's.

... Parents are hired to function as behavior modifiers. Two parents participate in each classroom for five to seven weeks and then train two other parents to replace them.

... The progress of each child is monitored as closely as possible, and each child is encouraged to progress at his own maximum rate. By emphasizing programmed instructional materials that allow for individualized instruction, the teacher can easily monitor individual rates of progress.

The Bank Street Program
Elizabeth Gilkeson, Sponsor
Bank Street College of Education
New York, New York

The Bank Street approach is concerned with many dimensions of each child's development. Learning and development are seen as intertwined, for if learning is to be more than superficial, it must be pursued by the child on behalf of his own development. The teacher is regarded as highly important in the learning-development process ... She functions for the child as a consistent adult whom he learns to trust. At Bank Street it is believed that the learning of specific skills should not take place independently of healthy emotional development ... since children, especially disadvantaged children with their frequently chaotic histories, need first of all to be able to trust in the predictability of the school environment and to learn the effects of their own actions within it. The child must also be able to relate his in-school learning to his out-of-school learning, which requires mutual planning with parents.

Bank Street treats the classroom as the child's workroom, where he is free to investigate objects and explore various media. He makes choices and carries out plans. He works individually or undertakes cooperative projects. It is a stable, ordered environment. The teacher introduces activities and plans events, but her teaching is in terms of the individual child's response. She points out and elaborates on a child's experiences. The planned activities originate from classroom themes (organizing chores, cooking, block building) and later extend to community themes (food marketing, traffic control, sources of water). Academic skills are learned in the context of a relevant, engaging classroom life.

In this program language development is seen as including the development of interpersonal communication in addition to its role in cognitive development ... Language, written and spoken, surrounds the child in the classroom, and the program's objective is that he will learn it as a useful, pleasurable tool.

The Florida Project
Ira Gordon, Sponsor
Institute of Development of Human Resources
College of Education, University of Florida
Gainesville, Florida

Gordon's position is that if an intervention program is to be successful, it must start early (preferably during infancy), and it must include the home environment, especially the mother, in addition to the child ....

In Gordon's program teaching occurs in both the home and the school and is coordinated by a paid parent educator who comes from the same population as the children's mothers. The parent educator is trained by the program personnel. In the classroom she functions as a teacher's aide. She then takes into the home the tasks that are taught in the classroom and instructs the mother in how to teach them to the child. The mother thus ... learns what kinds of child activities she should encourage, and she learns, as she observes her child learn, that her actions can have an effect and that she can be successful.

While curriculum is not standardized across the classes in this program, there is an orientation toward the theories of Jean Piaget. The children learn to arrange items in series, to classify and to name. Tasks ... are progressively sequenced and are demonstrated in a variety of contexts. For example, a systematic attempt is made to enumerate all the ways the toys and objects in the classroom can be used. Then the child is helped to discover and explore the alternatives himself, thus learning to be experimental rather than repetitious. The teacher or aide constantly uses language to accompany the child's actions.

The Tucson Early Education Model

Marie Hughes and Ronald Henderson, Sponsors
Arizona Center for Early Childhood Education
College of Education
University of Arizona
Tucson, Arizona

The Tucson curriculum is kept flexible. Teaching elaborates on and explores what is already salient for the children--their environment and their current interests. There is relatively less emphasis on which items are taught and on the transmission of specific content, and more emphasis on 'learning to learn.'

The teacher ... does not insist that /the child/ perform as she wishes and, rather than criticize him when he is wrong, she capitalizes on what he has done well and helps him to perform correctly... The child is encouraged to use all available sources for learning ... One program objective is that the children learn to cooperate with each other in their work.

... The program's philosophy is that if language is made useful, and if language and the written word surround the child, he will easily learn. The children's stories are recorded and the class's experiences are set down in illustrated books.

The Tucson philosophy is that the child does not have to be forced, or even requested, to learn ... if the environment is sufficiently interesting it will of itself ... 'demand' that the child learn.

The program encompasses four main objectives: (1) language competence, including labeling and concept development; (2) an intellectual base of other skills necessary for learning, including the ability to attend, to recall, to organize, to choose, and to imitate; (3) a motivational base, including positive attitudes toward school and learning, the ability to persist, and the expectation of success; and (4) societal arts and skills, which include language and mathematics as well as social cooperation.

The Responsive Model
Glen Nimnicht, Sponsor
Far West Laboratory for Educational Research and Development
Berkeley, California

In this program, Nimnicht would like to help develop individuals who have both the ability to solve problems on their own and the confidence to attack them. To this end, his program concentrates on enhancing the child's intellect, his sense of autonomy, and his self-concept.

The classroom environment is structured so that as the child freely explores it, he will make discoveries from which he will learn. For example, by experimenting with the programmed typewriter (originally devised by O. K. Moore), the child learns to read and write; at the same time he is learning to find answers to problems by himself. Nimnicht favors ... activities that are self-rewarding and do not depend upon rewards or punishments that are unrelated to the activities themselves. Nimnicht also feels 'responsiveness' is important. The environment in which these activities take place should ... respond when /the child/ is interested in learning and give him immediate feedback from his problem-solving attempts. Similarly, the teacher is trained to be responsive to the child. She guides him in response to his expressions of interest and helps him find answers, but avoids giving them to him.

In addition to problem solving and concept formation, Nimnicht's curriculum stresses sensory and perceptual acuity, which is conisdered an important part of cognitive development ... The classroom fosters sensory and perceptual discrimination through its orderliness and the tasks it contains. The child can focus on activities and can see and hear without distractions. The teacher further differentiates the environment for the child by ... /helping/ him understand in words what he is perceiving.

Nimnicht's ... system is based ... on the principle of intrinsic motivation. A child learns because he wants to.

The Cognitively Oriented Approach

David Weikart, Sponsor
High/Scope Educational Research Foundation
Ypsilanti, Michigan

Weikart's program focuses on three major concerns: the curriculum, which is cognitively oriented; the teacher, who is encouraged to take an active and innovative role in developing a program for her class; and the home, where teachers encourage the mothers to promote the cognitive growth of their children.

The curriculum is derived from the theories of Piaget: Conceptual development is understood to move from the simple to the complex and from the concrete to the abstract. The child progresses from the motor level ... where he learns to use his own body to experience concepts, to the verbal level, where he learns to label what he is ... experiencing, and finally to the symbolic level, where he develops the skills necessary to think abstractly. Self-concept is one of the most important concepts the child learns. The teacher can assist him in this learning by treating him as an autonomous individual who can make choices for himself the teacher also demonstrates language uses for the child by labeling, ... interpreting actions, and explaining causal relations.

Weikart believes that teachers can be effective only when the supervising staff has respect for them ... Within the program the teacher has the acknowledged right to design her own program for her own class, developing goals and methods through interaction with other teachers and through critical evaluation and guidance from the supervising staff.

In addition to the classroom curriculum, home training is seen as a necessary part of the program. The mother ... needs to be encouraged to use her intellectual skills in talking to the child and in becoming involved in his cognitive growth. The teacher suggests tasks for the mother to present to the child and ways in which the mother can more effectively teach him.